

[Amendment
Serial No. 10/658.630

Docket 5000-1-447

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently amended) An indoor local area network (LAN) system comprising:
at least a first remote terminal comprising:

(i) an ultra wide-band (UWB) conversion module for converting input digital data into analog data in an ultra wide-bandwidth for transmission from said at least first remote terminal and converting a received analog signal into a digital signal; and

(ii) an antenna connected with said UWB module for wirelessly;

transmitting the converted analog signal from the UWB module of the remote terminal in the ultra wide-bandwidth[[:]], and wherein said UWB module is adapted for receiving an analog signal in an ultra wide-bandwidth via the antenna and converting the received analog signal into a digital signal;

at least a first access point for performing UWB-based wireless communication with said first remote terminal in a corresponding area, said access point receiving said analog signal of the ultra wide-bandwidth transmitted from said first remote terminal and converting the received analog signal into an optical signal wherein said access point does not include a UWB module; and

a central unit in communication with said first access point via an optical cable, said central unit comprising:

a central unit optical transmitter/receiver module for receiving said optical signal from said first access point optical transmitter and converting the received optical signal into an electrical signal, comprising;

a UWB module for receiving said electrical signal converted by said optical transmitter/receiver module and converting the received electrical signal into a digital signal; and

a routing module for determining a destination of said digital

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signal converted by said UWB module from said digital signal, setting up a transfer path of said digital signal based on the determined result and sending said digital signal to said UWB module with information regarding said transfer path contained therein.
~~receiving said optical signal converted by said access point;~~
~~converting the received optical signal into a digital signal;~~
~~determining a destination of the converted digital signal; and~~
~~transmitting the digital signal to the determined destination.~~

2. (Original) The indoor LAN system as set forth in claim 1, wherein said access point includes:

a access point optical transmitter for receiving said analog signal of the ultra wide-bandwidth transmitted from said first remote terminal and for converting the received analog signal into an optical signal and transmitting the converted optical signal to said central unit via said optical cable; and

[[a]] an access point optical receiver for receiving an optical signal transmitted from said central unit, converting the received optical signal into an analog electrical signal of the ultra wide-bandwidth and wirelessly transmitting the converted analog electrical signal to a remote terminal of said determined destination.

3. (Cancelled)

4. (Currently amended) The indoor LAN system as set forth in claim [[3]] 1, wherein:

said central unit UWB module is adapted to convert said digital signal containing said information regarding said transfer path set up by said routing module into an analog electrical signal of the ultra wide-bandwidth and send the converted analog electrical signal to said central unit optical transmitter/receiver module; and

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said central unit optical transmitter/receiver module is adapted to convert said analog electrical signal converted by said UWB module into an optical signal and transmit the converted optical signal to said first access point for management of a network to which a destination remote terminal corresponding to said transfer path information belongs.

5. (Currently amended) The indoor LAN system as set forth in claim [[3]] 1, wherein said routing module is adapted to, upon determining from said digital signal converted by said central unit UWB module that said destination of said digital signal is not a terminal in a network managed by said access point connected with said central unit via said optical cable, transfer said digital signal containing said transfer path information to an outdoor network connected with said central unit, and manage communication of a destination remote terminal corresponding to said transfer path information.

6. (Currently amended) A method for providing an indoor local area network (LAN) system comprising the steps of:

(a) providing at least a first remote terminal comprising:

(i) an ultra wide-band (UWB) conversion module for converting input digital data into analog data in an ultra wide-bandwidth for transmission from said at least first remote terminal and converting a received analog signal into a digital signal, and

(ii) an antenna connected with said UWB module for:

wirelessly transmitting the converted analog signal from the UWB module of the remote terminal in the ultra wide-bandwidth[[:]] and

~~wherein said UWB module is adapted for receiving an analog signal in an ultra wide-bandwidth via the antenna and converting the received analog signal into a digital signal;~~

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(b) performing UWB-based wireless communication with said first remote terminal in a corresponding area by at least a first access point, said access point receiving said analog signal of the ultra wide-bandwidth transmitted from said first remote terminal and converting the received analog signal into an optical signal wherein said at least first access point does not include a UWB module; and

(c) providing a central unit, ~~the central unit~~ including a central unit UWB module and the central unit in communication with said first access point via an optical cable, said central unit;

receiving said optical signal from said first access point optical transmitter and converting the received optical signal into an electrical signal by a central unit optical transmitter/receiver module;

receiving said electrical signal converted by said optical transmitter/receiver module and converting the received electrical signal into a digital signal by the central unit UWB module; and

determining a destination of said digital signal converted by said UWB module from said digital signal, setting up a transfer path of said digital signal based on the determined result and sending said digital signal to said UWB module with information regarding said transfer path contained therein by a routing module; wherein

said central unit UWB module is adapted to convert said digital signal containing said information regarding said transfer path set up by said routing module into an analog electrical signal of the ultra wide-bandwidth and send the converted analog electrical signal to said central unit optical transmitter/receiver module; and

said central unit optical transmitter/receiver module is adapted to convert said analog electrical signal converted by said UWB module into an optical signal and transmit the converted optical signal to said first access point for management of a network to which a destination remote terminal corresponding to said transfer path information belongs.

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~~receiving said optical signal converted by said access point,
converting the received optical signal into a digital signal,
determining a destination of the converted digital signal and
transmitting the digital signal to the determined destination.~~

7. (Original) The method as set forth in claim 6, further comprising:

(b) (i) providing an access point optical transmitter for receiving said analog signal of the ultra wide-bandwidth transmitted from said first remote terminal and for converting the received analog signal into an optical signal and transmitting the converted optical signal to said central unit via said optical cable; and

(b) (ii) providing an access point optical receiver for receiving an optical signal transmitted from said central unit, converting the received optical signal into an analog electrical signal of the ultra wide-bandwidth and wirelessly transmitting the converted analog electrical signal to a remote terminal of said determined destination.

8. (Cancelled)

9. (Cancelled)

10. (Currently amended) The method as set forth in claim [[8]] 6, wherein said routing module determines from said digital signal converted by said central unit UWB module that said destination of said digital signal is not a terminal in a network managed by said access point connected with said central unit via said optical cable, transfer said digital signal containing said transfer path information to an outdoor network connected with said central unit, and manage communication of a destination remote terminal corresponding to said transfer path information.

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11. (Cancelled) An indoor LAN system comprising:

a first area, a second area, and a third area of sub-networks each having respective ~~management ranges~~ of nodes therein;

a first access point, a second access point, and a third access point, each of the first, second and third access points being associated with a respective area;

a central unit ~~that is~~ in communication with each of the first, second and third areas and with an external network, comprising:

a central unit optical transmitter/receiver module for receiving said optical signal from said first access point optical transmitter and converting the received optical signal into an electrical signal, comprising:

a UWB module for receiving said electrical signal converted by said optical transmitter/receiver module and converting the received electrical signal into a digital signal; and

a routing module for determining a destination of said digital signal converted by said UWB module from said digital signal, setting up a transfer path of said digital signal based on the determined result and sending said digital signal to said UWB module with information regarding said transfer path contained therein;

wherein each of the access points ~~sub-networks~~ and respective nodes within a corresponding area communicate via Ultra Wide Band (UWB) communication; and

wherein each of the access points ~~sub-networks~~ and the central unit and ~~the central unit~~ communicate via optical fiber and the central unit includes a UWB module; and

wherein each of the access points includes a optical transmitter/receiver module for converting optical communication from a corresponding area ~~from one of the~~

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~~first, second and third areas or said~~ central unit and converting said communication into an analog UWB signal to communicate with at least one of the respective nodes wherein said access points do not include a UWB module.

12. (Original) The system according to claim 11, wherein the central unit and the external network communicate via a Fiber To The Home (FTTH) system.